IN THE CLAIMS

Please amend claims 104, 105, 107 and 109, cancel claim 106 and add new claim 115.

1. (Withdrawn) A system for implanting a bypass graft, comprising:

a tissue expansion device adapted to engage an orifice;

a tissue puncturing tool adapted to form an orifice enlargeable by the expansion device;

a graft comprising a graft wall with first, second and third openings formed through the graft wall;

wherein the graft is adapted to be removably mounted on the expansion device in which the expansion device extends through the first and third openings, with the first opening disposed near a distal end of the expansion device and the third opening disposed proximally of the first opening so to enable use of the expansion device to position the first region of the graft wall into engagement with a first orifice in a tissue wall for fixation of the first region therein; and

wherein the graft further is slidable relative to the expansion device to permit a proximal withdrawal of the expansion device from the first region after said fixation; and

a closure mechanism for closing the third opening following withdrawal of the expansion device from the graft.

2. (Withdrawn) The system of claim 1 further including a fixation element near the first end.

3. (Withdrawn) The system of claim 2 wherein the fixation element is adapted to mechanically secure the first region of the graft wall to the tissue wall.

4. (Withdrawn) The system of claim 2 wherein the fixation element comprises an electrically conductive heating element.

5. (Withdrawn) The system of claim 1 wherein the expansion device comprises an expandable balloon member.

6. (Withdrawn) The system of claim 1 wherein said closure mechanism comprises a suture disposed through at least a portion of the graft wall around the third opening.

7. (Withdrawn) The system of claim 1 wherein said tissue puncturing tool comprises an elongate needle mounted slidably within the expansion device.

8. (Withdrawn) A system for deploying a bypass graft, comprising:

an elongate and flexible carrier having a proximal end and a distal end, insertable by the distal end for intralumenal movement toward a selected site along a body lumen;

a tissue perforating mechanism proximate the distal end, positionable at a first location near the selected site and operable from the proximal end of the carrier to form a first opening through tissue at the first location, and further positionable at a second location near the selected site and operable to form a second opening through tissue at the second location;

a graft guide supported by the carrier and disposed near said distal end and movable into a guiding position in which the graft guide extends from the first location through the first opening to the second location and through the second opening;

a tubular graft adapted for movement along the carrier; and a graft controller operable to move the graft, when so mounted, distally along the carrier toward the graft guide and distally along the graft guide when the guide is in the guiding position to a bypass location in which the graft extends from the first location to the second location and further extends through the first and second openings.

9. (Withdrawn) The system of claim 8 wherein the carrier comprises a catheter having a catheter lumen formed therethrough.

10. (Withdrawn) The system of claim 9 wherein the graft guide comprises a dilator slideably contained in the catheter lumen and having a tapered distal tip, and wherein the tissue perforating mechanism comprises an elongate needle slidably contained within the dilator.

11. (Withdrawn) The system of claim 10 wherein the catheter lumen and the dilator are formed with substantially matching non-circular profiles to enable a transfer of torque from the catheter to the dilator.

12. (Withdrawn) The system of claim 10 wherein the dilator distal tip is pre-shaped to facilitate selective positioning of the tip by rotating the dilator.

13. (Withdrawn) The system of claim 10 further comprising a needle stop.

14. (Withdrawn) The system of claim 10 wherein the graft controller comprises an elongate, tubular stylet insertable within the catheter lumen.

15. (Withdrawn) The system of claim 9 wherein the graft guide comprises a distal region of the catheter and the tissue perforating mechanism comprises (i) a dilator having a tapered distal tip, said dilator contained slidably within the catheter lumen, and (ii) an elongate needle contained slidably within the dilator.

16. (Withdrawn) The system of claim 15 wherein the controller comprises a stylet insertable into the catheter lumen.

17. (Withdrawn) The system of claim 8 further comprising a collet.

18. (Withdrawn) The system of claim 9 further comprising an inflatable balloon mounted to the graft guide near a distal end of the graft guide.

19. (Withdrawn) The system of claim 9 wherein the controller further is adapted to maintain the graft in the bypass location while the graft guide and the carrier are withdrawn proximally from the selected site.

20. (Withdrawn) A process for translumenally deploying a bypass graft, comprising:

advancing an elongate catheter intralumenally toward a selected site along a body lumen;

forming a first opening through a first area of tissue wall defining the lumen via a tissue perforating mechanism;

advancing the tissue perforating mechanism through the first opening to a location spaced apart from the first opening;

forming a second opening through a second area of tissue wall at said location with said mechanism;

advancing a graft guide distally through the first opening to said location and through the second opening;

advancing a tubular graft along the guide via a graft controller to a bypass position in which the graft extends through the first opening to the second opening.

21. (Withdrawn) The process of claim 20 wherein the graft guide comprises a tissue dilator slidably mounted within the catheter.

22. (Withdrawn) The process of claim 20 wherein said graft guide comprises a distal region of the catheter, and the step of advancing the graft guide comprises distally advancing the catheter until the distal region of the catheter extends through the first and second openings.

23. (Withdrawn) The process of claim 20 further comprising the step of securing the graft at proximal and distal end portions thereof to tissue at the first and second openings, respectively.

24. (Withdrawn) The process of claim 23 wherein at least one of the first and second openings is formed through tissue of an organ defining a cavity, and whereby the graft, when secured, is in fluid communication with the cavity.

25. (Withdrawn) The process of claim 23 wherein said first and second openings are formed through tissue walls of a first blood vessel and a second blood vessel, respectively, and whereby the graft, when secured, provides a fluid conduit coupling the first and second blood vessels.

26. (Withdrawn) The process of claim 20 wherein at least one of the openings is through an organ tissue wall into a cavity of an organ.

27. (Withdrawn) The process of claim 20 wherein the first and second openings are formed through tissue walls of a first blood vessel and a second blood vessel, respectively.

28. – 41. (Previously Cancelled)

42. (Withdrawn) An anastomotic connector comprising:

at least one encircling member having a distal end attachable to a graft, a proximal end attachable to the graft and configured to expand into and contact the interior of a vessel or organ wall.

43. (Withdrawn) The connector of claim 42 wherein the at least one encircling member is configured to bow outward to exert force against a vessel or organ wall and support a graft within a lumen defined by the vessel or organ wall.

44. – 47. (Previously Cancelled)

48. (Withdrawn) A system for deploying and securing at least one end of a bypass graft to a vessel or organ, comprising:

a tissue perforator;

a tissue dilator;

a tubular carrier adapted for insertion into a vessel lumen, over the dilator and through an opening in the vessel lumen;

a connector attached to one end of a bypass graft adapted to compress into a reduced outer diameter in response to an external force and adapted to expand into an expanded outer diameter upon removal of the external force.

49. (Withdrawn) The system of claim 48 wherein the connector is self-expanding.

50. (Withdrawn) The system of claim 48 further comprising a stylet for advancing the connector and bypass graft through the carrier.

51. (Withdrawn) The system of claim 48 further comprising a compression fitting adapted to compress the vessel wall against the connector.

52. (Withdrawn) The system of claim 48 wherein the connector comprises at least one radially extending segment adapted to compress for insertion through the carrier and to expand to at least one resting geometry upon advancing beyond the distal end of the carrier.

53. (Withdrawn) A system for securing a bypass graft to at least one vessel comprising:

a tubular member having a first end, a second end, and a passageway defining an inner lumen extending between those ends;

a first connector attached to the first end of the tubular member;

a second connector attached to the second end of the tubular member;

a delivery mechanism adapted for producing a first opening at a first vessel wall location and a second opening at a second vessel wall location, expanding said first opening and said second opening, and maintaining said first opening and said second opening in an expanded orientation;

wherein the first connector and tubular member are adapted to be inserted as a single unit through the first opening; and

wherein the first connector and second connector are configured to secure the tubular member to the first and second vessel wall locations, respectively.

54. (Withdrawn) The system of claim 53 wherein at least one of the first and second connectors is self-expanding.

55. (Withdrawn) The system of claim 53 wherein the delivery mechanism is removable from at least one of the first vessel opening and the second vessel opening.

56. (Withdrawn) The system of claim 53 wherein at least one of the first connector and the second connector comprises at least one radially extending segment adapted to compress for insertion through the delivery mechanism and self-expand to a preshaped geometry upon advancing beyond the distal end of the delivery mechanism.

57. (Withdrawn) The system of claim 53 wherein at least one of the first connector and the second connector comprises at least one substantially annular member adapted to compress for

insertion through the delivery mechanism and expand into contact with at least a portion of the vessel upon advancing beyond an end of the delivery mechanism.

58. (Withdrawn) The system of claim 57 wherein the at least one substantially annular member contacts and supports the vessel at a location other than one of the first opening or the second opening.

59. (Withdrawn) The system of claim 53 wherein the delivery mechanism comprises a needle and a dilator.

60. (Withdrawn) The system of claim 59 wherein the delivery mechanism additionally comprises a guiding catheter.

61. (Withdrawn) The system of claim 60 wherein the delivery mechanism additionally comprises a guidewire.

62. (Withdrawn) The system of claim 61 further comprising a stylet adapted to advance one or both of said first and second connectors through one or both of said first opening or second opening, respectively.

63. (Withdrawn) The system of claim 53 wherein the tubular member is a saphenous vein.

64. (Withdrawn) A method for creating an anastomosis between a tubular member and a mammalian vessel or organ segment, comprising:

positioning an end of the tubular member having a self-expanding connector attached thereto near the mammalian vessel or organ segment;

creating an opening within a wall of the vessel or organ segment; and

expanding the opening and advancing a distal portion of the connector through said opening such that the distal portion enters an interior of said vessel or organ segment and self-expands into an expanded configuration and the distal portion directly contacts an inner surface of the vessel or organ segment wall without further penetrating the wall.

65. (Withdrawn) The method of claim 64 wherein the tubular member and connector are positioned through the distal end of a catheter.

66. (Withdrawn) The method of claim 64 wherein the connector is not affixed to the tubular member but wherein the tubular member is advanced over and affixed to the connector after the connector is affixed in the vessel or organ segment.

67. (Previously Cancelled)

68. (Withdrawn) The system of claim 1 wherein the expansion device comprises a dilator having a tissue dilating tip at its distal end.

69. (Withdrawn) The system of claim 1 wherein the graft is slidable relative to the expansion device to further allow fixation of the second region of the graft wall into engagement with the second orifice in the tissue wall.

70. (Withdrawn) The system of claim 69 wherein fixation of the second region of the graft wall into engagement with the second orifice occurs prior to fixation of the first region of the graft wall into engagement with the first orifice.

71. (Withdrawn) The system of claim 1 wherein said closure mechanism comprises a staple disposed through at least a portion of the graft wall around the third opening.

72. (Withdrawn) An implantable anastomosis bypass graft system comprising: a tubular graft comprising a first end and a second end with a lumen defined therebetween, at least one of the first end and the second end of the tubular graft being positionable at a location along a body lumen via a proximal attractive element; and

a distal attractive element disposable within the body lumen and adapted to magnetically engage the proximal attractive element such that an orifice is formed at the location along the body lumen whereby the tubular graft is in fluid communication with the body lumen.

73. (Withdrawn) The system of claim 72 further comprising an elongate and flexible carrier having a proximal end and a distal end, insertable by the distal end for intralumenal movement toward a selected site along the body lumen.

74. (Withdrawn) The system of claim 73 further comprising a tissue perforating mechanism proximate the distal end of the carrier, positionable at a first location near the selected site and operable from the proximal end of the carrier to form a first opening through tissue at the first location, and further positionable at the location along the body lumen and operable to form the orifice through tissue at the location along the body lumen.

75. (Withdrawn) The system of claim 74 further comprising a graft guide supported by the carrier and disposed near the distal end and movable into a guiding position in which the graft guide extends from the first location through the first opening to the location along the body lumen and through the orifice.

76. (Withdrawn) The system of claim 75 further comprising a graft controller operable to move the graft, when so mounted, distally along the carrier toward the graft guide and distally along the graft guide when the guide is in the guiding position to a bypass location in which the graft extends from the first location to the location along the body lumen and further extends through the first opening and through the orifice.

77. (Withdrawn) The system of claim 73 wherein the carrier comprises a catheter having a catheter lumen formed therethrough.

78. (Withdrawn) The system of claim 74 wherein the tissue perforating mechanism comprises an elongate needle slideably contained within the carrier.

79. (Withdrawn) The system of claim 78 further comprising a needle stop.

80. (Withdrawn) The system of claim 75 wherein the graft guide comprises a dilator slideably contained in the carrier and having a tapered distal tip.

81. (Withdrawn) The system of claim 80 wherein the dilator distal tip is pre-shaped to facilitate selective positioning of the tip by rotating the dilator.

82. (Withdrawn) The system of claim 75 wherein the proximal attractive element is located at a distal end of the graft guide.

83. (Withdrawn) The system of claim 72 wherein the proximal attractive element is comprised of a ferrous material.

84. (Withdrawn) The system of claim 72 wherein the proximal attractive element is an electromagnet comprised of at least one conductive coil.

85. (Withdrawn) The system of claim 72 wherein the distal attractive element comprises a metallic guidewire.

86. (Withdrawn) The system of claim 85 wherein the metallic guidewire further comprises a magnet.

87. (Withdrawn) The system of claim 86 wherein the magnet is disposed at a distal end of the guidewire.

88. (Withdrawn) A method of magnetically deploying a tubular graft comprising:

engaging a tissue wall between a proximal attractive element and a distal attractive element;

forming an opening through the tissue wall with a tissue perforating mechanism; and

attaching a tubular graft to the tissue wall at the opening such that the tubular graft and the body lumen are in communication.

89. (Withdrawn) The method of claim 88 further comprising advancing an elongate catheter intralumenally toward a selected site along the body lumen prior to forming the opening through the tissue wall.

90. (Withdrawn) The method of claim 88 wherein prior to engaging the tissue wall, the method further comprises:

advancing the tissue perforating mechanism through a second opening spaced apart from the opening; and

positioning the tissue perforating mechanism over the location via a magnetic force exerted on the mechanism.

91. (Withdrawn) The method of claim 88 further comprising advancing a graft guide distally through the opening prior to attaching the end of the tubular graft to the opening.

92. (Withdrawn) The method of claim 91 further comprising advancing the tubular graft along the guide via a graft controller to a bypass position prior to attaching the tubular graft to the opening.

93. (Withdrawn) The method of claim 91 wherein the graft guide comprises a tissue dilator slideably mounted within the catheter.

94. (Withdrawn) The method of claim 91 wherein said graft guide comprises a distal region of the catheter, and the step of advancing the graft guide comprises distally advancing the catheter until the distal region of the catheter extends through the opening.

95. (Withdrawn) The method of claim 90 wherein the first and second openings are formed through tissue walls of a first blood vessel and a second blood vessel, respectively, and whereby the graft, when secured, provides a fluid conduit coupling the first and second blood vessels.

96. (Withdrawn) The method of claim 88 wherein the opening is through an organ tissue wall into a cavity of an organ.

97. (Withdrawn) The method of claim 88 further comprising positioning the distal attractive element at the opening within the body lumen.

98. (Withdrawn) The method of claim 88 wherein the distal attractive comprises a metallic guidewire.

99. (Withdrawn) The method of claim 98 wherein the metallic guidewire further comprises a magnet.

100. (Withdrawn) The method of claim 99 wherein the magnet is disposed at a distal end of the guidewire.

101. (Withdrawn) The method of claim 88 wherein the proximal attractive element is disposed on the mechanism and exerts a magnetic force on the distal attractive element.

102. (Withdrawn) The method of claim 101 wherein the proximal attractive element is comprised of a ferrous material.

103. (Withdrawn) The method of claim 102 wherein the proximal attractive element is an electromagnet comprised of at least one conductive coil.

104. (Currently Amended) An anastomosis connector for connecting a tubular graft to a blood vessel or hollow body organ comprising:

an annular structure configured for positioning within the tubular graft and for providing fluid communication between the tubular graft and the vessel or organ, and

at least one compressible member extending from a distal end of the annular structure, the at least one compressible member having a first segment and a second segment,

the first segment being configured to engage a first portion of interior surface of the vessel or organ,

the second segment being configured to engage a second portion of interior surface of the vessel or organ, a distal end of the second segment being attached to a distal end of the first segment, and

the compressible member being radially deformable between a ~~first~~ reduced profile and ~~a second~~ an expanded profile, wherein the first and second segments are curved when the compressible member is in the expanded profile.

105. (Currently Amended) The connector of claim 104 further comprising a plurality of additional compressible members, each of the additional compressible members being radially deformable between the ~~first~~ reduced profile and the ~~second~~ expanded profile.

106. (Currently Cancelled)

107. (Currently Amended) The connector of claim 104 wherein the compressible member expands from the ~~first~~ reduced profile to the ~~second~~ expanded profile upon removal of a constraining force.

108. (Previously Presented) The connector of claim 107 wherein a catheter surrounding the compressible member provides the constraining force.

109. (Currently Amended) The connector of claim 104 wherein the compressible member is radially self-expanding from the ~~first~~ reduced profile and the ~~second~~ expanded profile.

110. (Previously Presented) The connector of claim 104 wherein the compressible member is comprised of a memory elastic material.

111. (Previously Presented) The connector of claim 110 wherein the memory elastic material is selected from the group consisting of stainless steel, nickel titanium, and thermoset plastic.

112. (Previously Presented) The connector of claim 104 wherein the expanded profile of the compressible member defines a radially enlarged profile.

113. (Previously Presented) The connector of claim 112 wherein the radially enlarged profile is substantially circular.

114. (Previously Presented) The connector of claim 104 wherein the expanded profile of the compressible member is configured to conform to the interior surface of the vessel or organ.

115. (New) The connector of claim 104 wherein the first and second segments define a loop configuration.